What is claimed is:

1. A method of preparing (S)-chiral alcohol comprising:

(a) reacting in organic solvent a compound of the following chemical formula 1 as a starting material,

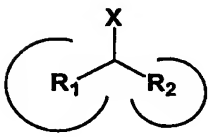
a racemization metal catalyst,

an acyl donor being capable of acylating an alcohol compound, and

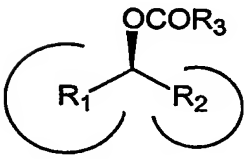
a protein hydrolysis enzyme being capable of stimulating the enantioselective acylation of a racemic compound to obtain a chiral ester compound of chemical formula 3; and

(b) hydrolyzing the chiral ester compound of chemical formula 3 to obtain (S)-chiral alcohol;

[chemical formula 1]



[chemical formula 3]



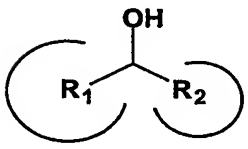
wherein X is –OH or =O,R_1, R_2 and R_3 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalky, wherein the R_1 group and the R_2 group can be linked together, and wherein a size of a circular arc indicates that the R_1 group is larger than the R_2 group.

2. The method of preparing (S)-chiral alcohol according to claim 1, further comprising adding a hydrogen donor in the (a) step when the starting material of chemical formula 1 comprises ketone such that X is =O.

3. The method of preparing (S)-chiral alcohol according to claim 1:

wherein the starting material of chemical formula 1 is the compound of the following chemical formula 1a;

[chemical formula 1a]



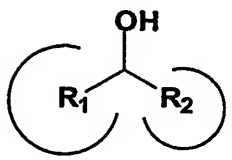
wherein R_1 and R_2 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalky; and

wherein R_1 and R_2 can be linked together.

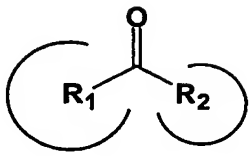
4. The method of preparing (S)-chiral alcohol according to claim 3, further comprising:

obtaining an alcohol compound of chemical formula 1a by adding hydrogen donor to ketone compound of the following chemical formula 1b to reduce it;

[chemical formula 1a]



[chemical formula 1b]



wherein R_1 and R_2 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalky; and

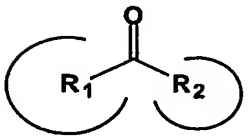
wherein R_1 and R_2 can be linked together.

5. The method of preparing (S)-chiral alcohol according to claim 1, further comprising:

adding hydrogen donor to reduce a ketone group in (a) step;

wherein the compound of chemical formula 1 comprises chemical formula 1b;

[chemical formula 1b]



wherein R_1 and R_2 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalky; and

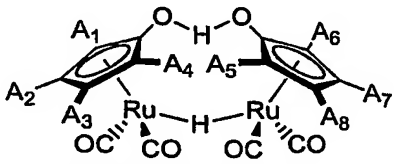
wherein R_1 and R_2 can be linked together.

6. The method of preparing (S)-chiral alcohol according to claim 1, wherein the (a) step reaction comprises a one-pot reaction and wherein the reaction is performed in one vessel.

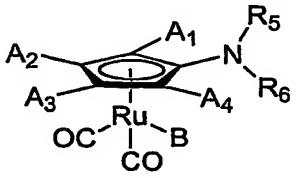
7. The method of preparing (S)-chiral alcohol according to claim 1, wherein the metal catalyst comprises a ruthenium complex compound.

8. The method of preparing (S)-chiral alcohol according to claim 1, wherein the metal catalyst is selected from the group consisting of ruthenium complex compounds represented by the following chemical formulas 4 to 8:

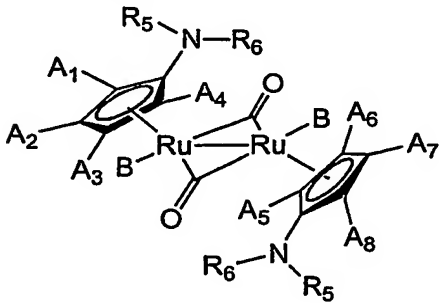
[chemical formula 4]



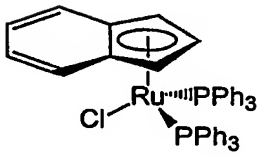
[chemical formula 5]



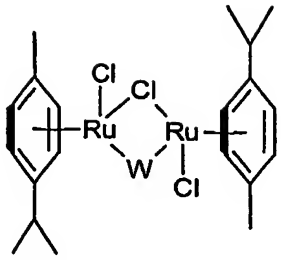
[chemical formula 6]



[chemical formula 7]



[chemical formula 8]



wherein A_1, A_2, A_3, A_4, A_5, A_6, A_7 and A_8 are independently hydrogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_5-C_{18} aryl, or substituted or unsubstituted C_2-C_{20} heterocycle;

wherein R_5 and R_6 are independently hydrogen, substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalkyl;

wherein B comprises a substituent selected from the group consisting of hydrogen, carbonyl, halogen and trifluoromethanesulfonate or there is no substituent in B site; and

wherein W is hydrogen or a halogen.

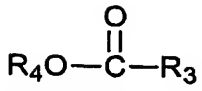
9. The method of preparing (S)-chiral alcohol according to claim 2, wherein the acyl donor comprises 2,4-dimethyl-3-pentanol, 2,6-dimethyl-4-heptanol, formic acid, or hydrogen.

10. The method of preparing (S)-chiral alcohol according to claim 1, wherein the acyl donor is linked to the R_1 group or the R_2 group of the chemical formula 1.

11. The method of preparing (S)-chiral alcohol according to claim 10, wherein the acyl donor is a substituent including -OCO-R_3 terminal group linked to the R_1 or R_2 of the chemical formula 1.

12. The method of preparing (S)-chiral alcohol according to claim 1, wherein the acyl donor is the compound of the chemical formula 2; and

[chemical formula 2]



wherein R_3 and R_4 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalkyl.

13. The method of preparing (S)-chiral alcohol according to claim 1, wherein the protein hydrolysis enzyme is selected from the group consisting of stabilized or fixed subtilisin, chymotrypsin, papain, protease from *Aspergillus orygae*, protease from *Aspergillus melleus*, protease from *Streptomyces griseus*, and protease from *Bacillus stearothemophilus*.

14. The method of preparing (S)-chiral alcohol according to claim 1, wherein the protein hydrolysis enzyme is subtilisin.

15. The method of preparing (S)-chiral alcohol according to claim 1, wherein the organic solvent is benzene, toluene, C_5-C_{10} alkane, C_5-C_{10} cycloalkane, tetrahydrofuran, dioxane, C_2-C_{10} dialkylether, C_3-C_{10} alkylate, C_2-C_{10} cyanoalkane, C_3-C_{10} dialkyl ketone, dichloromethane, chloroform, carbon tetrachloride, C_4-C_{10} tertiary alcohol, or a room temperature ionic liquid .

16. The method of preparing (S)-chiral alcohol according to claim 1, wherein the reaction temperature in (a) step is room temperature to 80°C.

17. A (S)-chiral alcohol prepared according to claim 1.

18. A method of preparing (S)-chiral ester comprising:

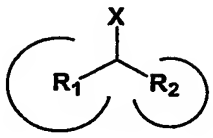
reacting in organic solvent the compound of the following chemical formula 1 as a starting material,

a racemization metal catalyst,

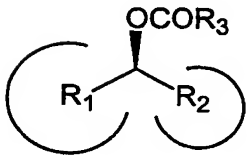
an acyl donor being capable of acylating an alcohol compound, and

a protein hydrolysis enzyme being capable of stimulating the enantioselective acylation of a racemic compound to obtain a chiral ester compound of chemical formula 3.

[chemical formula 1]



[chemical formula 3]



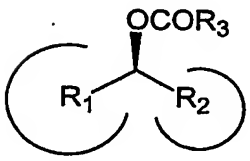
wherein R_1 and R_2 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalky, and R_1 and R_2 can be linked together; and

wherein a size of a circular arc indicates that the R_1 group is larger than the R_2 group.

19. The method of preparing (S)-chiral ester according to claim 18, further comprising adding a hydrogen donor in the (a) step and when the starting material comprises ketone where X =O.

20. A (S)-chiral ester of the following chemical formula 3 prepared according to claim 18;

[chemical formula 3]



wherein R_1, R_2 and R_3 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalkyl;

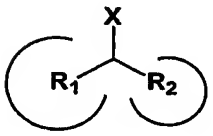
wherein the R_1 group and the R_2 group can be linked together; and

wherein a size of a circular arc indicates that the R_1 group is larger than the R_2 group.

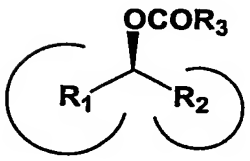
21. A method of preparing (S)-chiral alcohol of the following chemical formula 1 comprising:

hydrolyzing the chiral ester of the chemical formula 3 prepared according to claim 18.

[chemical formula 1]



[chemical formula 3]



wherein X –OH or =O,

wherein R_1, R_2 and R_3 are independently substituted or unsubstituted C_1-C_{15} alkyl, substituted or unsubstituted C_2-C_{15} alkenyl, substituted or unsubstituted C_2-C_{15} alkynyl, substituted or unsubstituted C_5-C_{18} aryl, substituted or unsubstituted C_6-C_{18} arylalkyl, substituted or unsubstituted C_2-C_{20} heterocycle, substituted or

unsubstituted C_3-C_{20} heteroarylalkyl, substituted or unsubstituted C_3-C_{15} cycloalkyl, substituted or unsubstituted C_3-C_{15} cycloalkenyl, substituted or unsubstituted C_6-C_{15} cycloalkynyl, or substituted or unsubstituted C_3-C_{20} heterocycloalkyl;

wherein R_1 and R_2 can be linked together; and

wherein a size of a circular arc indicates that the R_1 group is larger than the R_2 group.